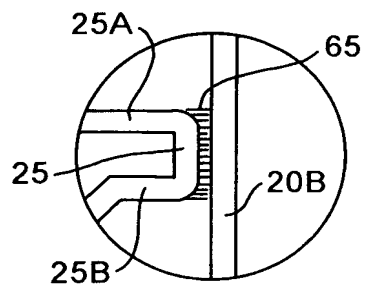
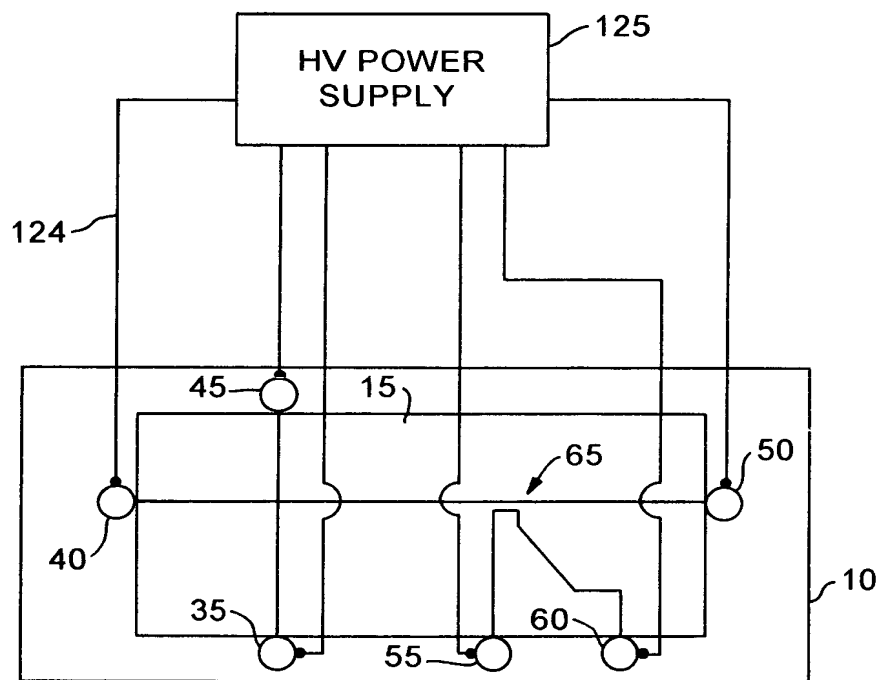


5A ↗

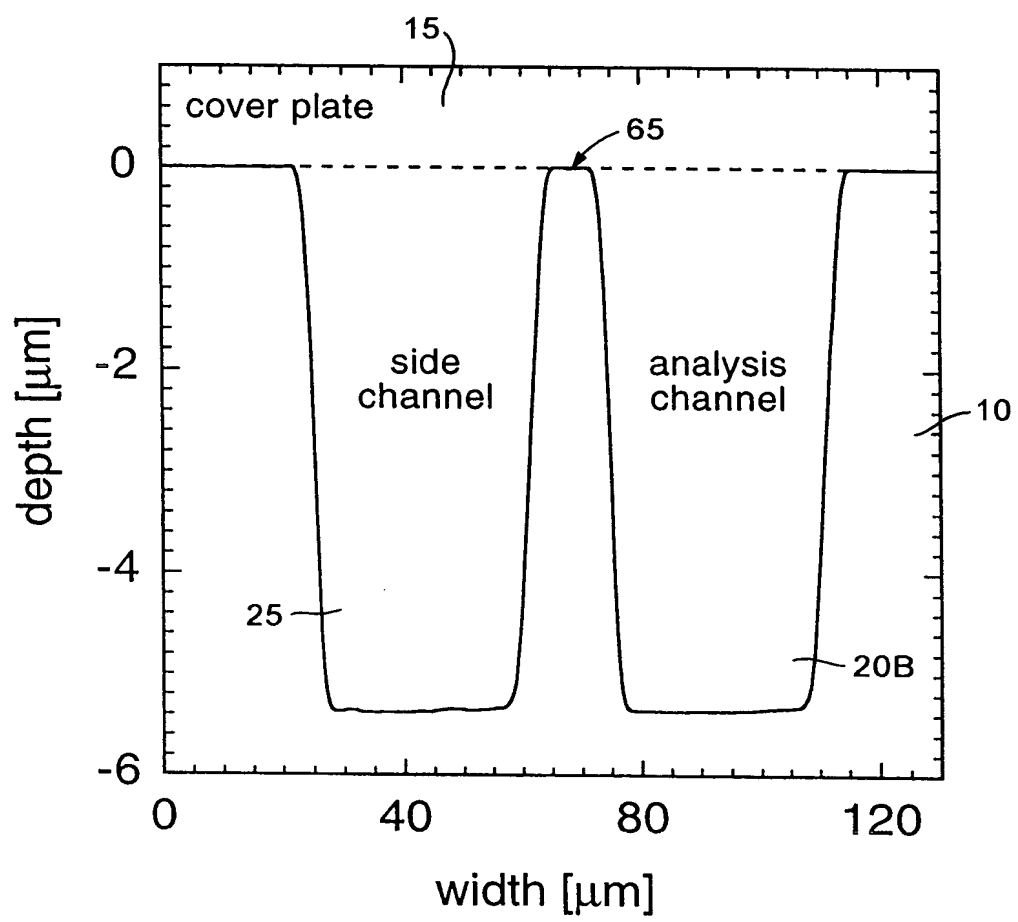
**FIG. 1**



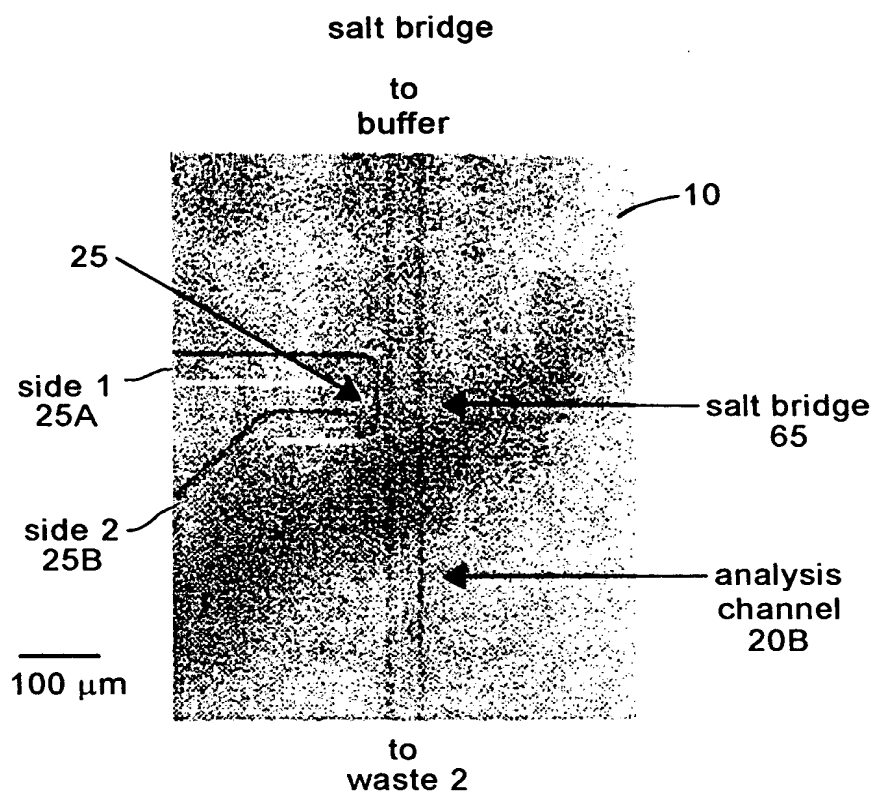
**FIG. 1A**



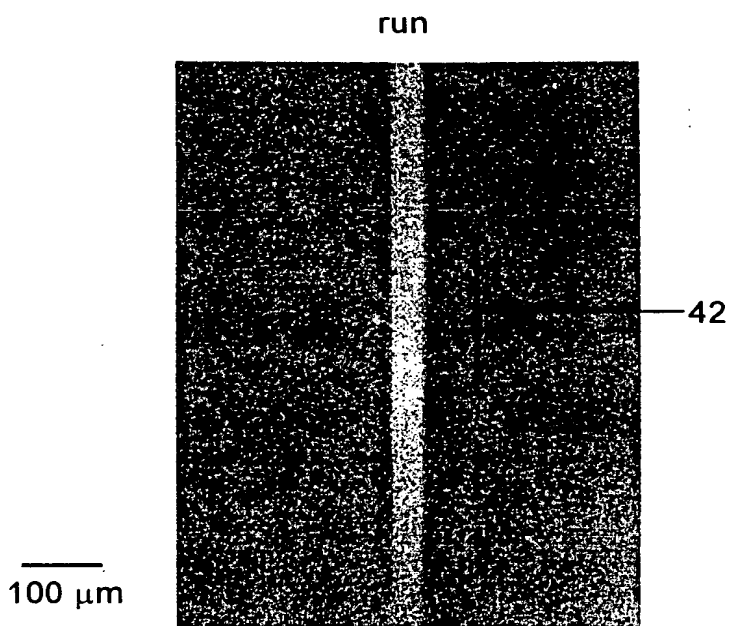
**FIG. 1B**



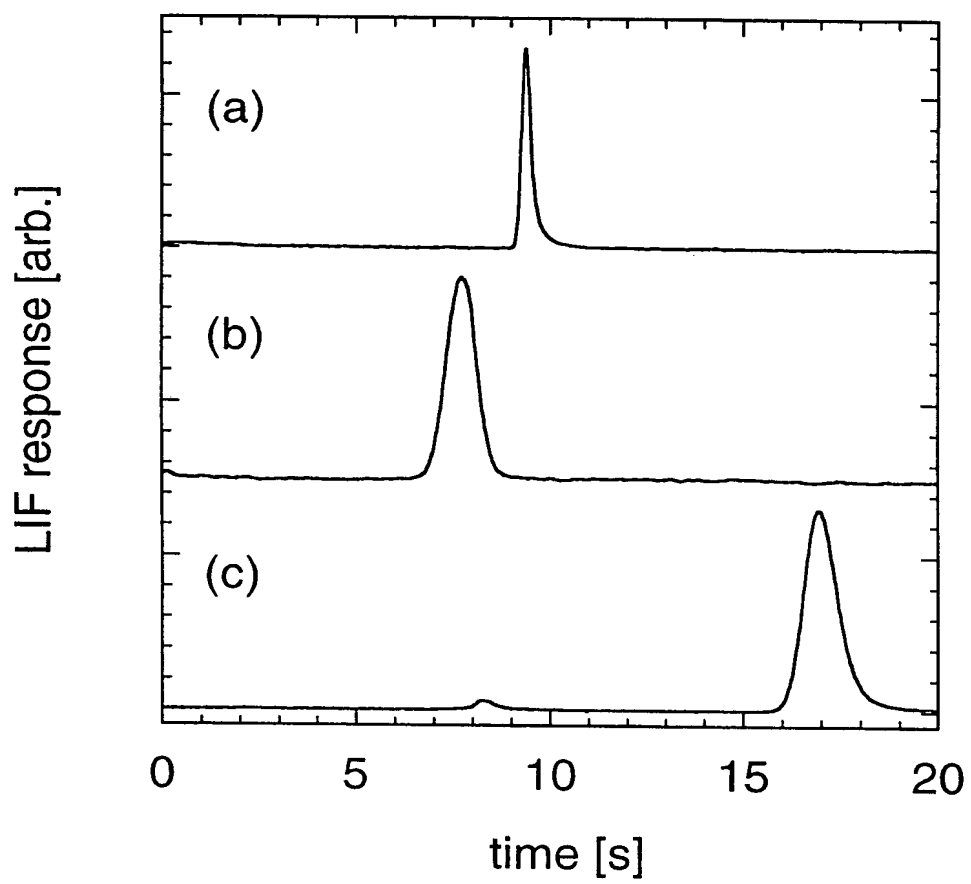
**FIG. 2**



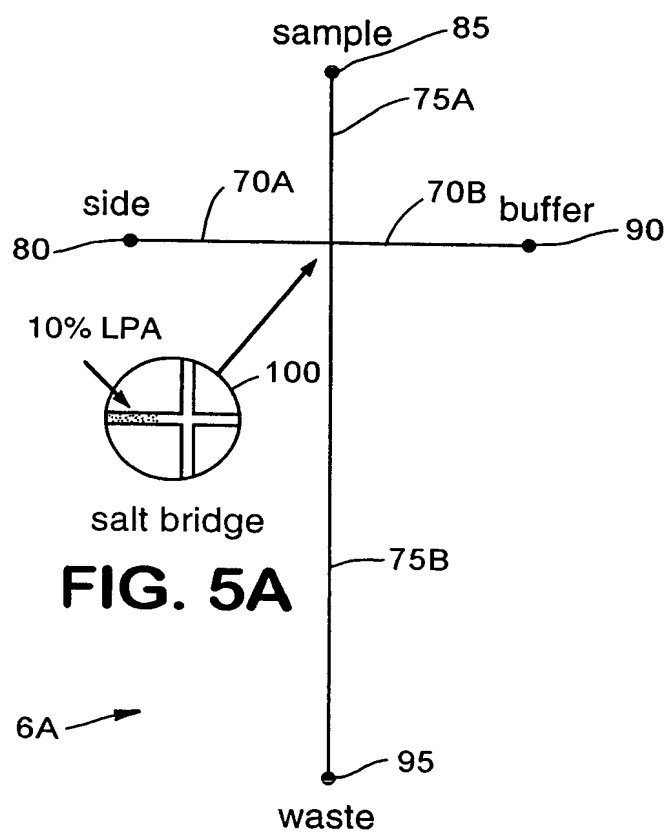
**FIG. 3a**



**FIG. 3b**



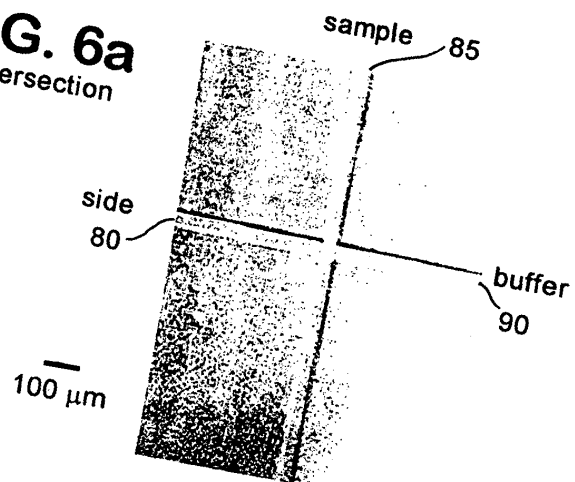
**FIG. 4**



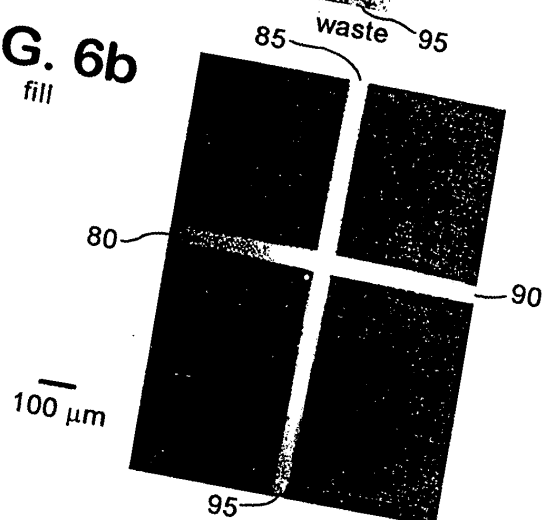
**FIG. 5A**

**FIG. 5B**

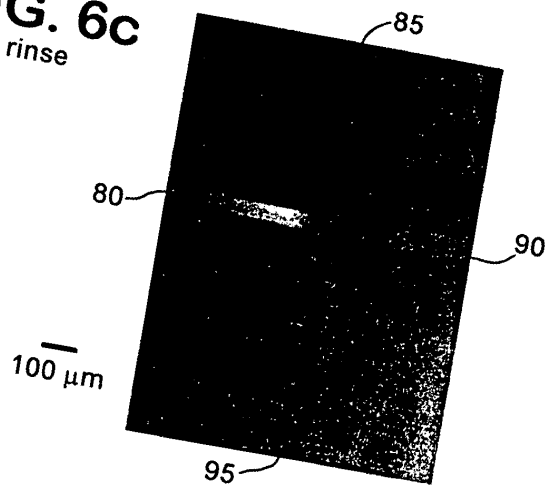
**FIG. 6a**  
intersection

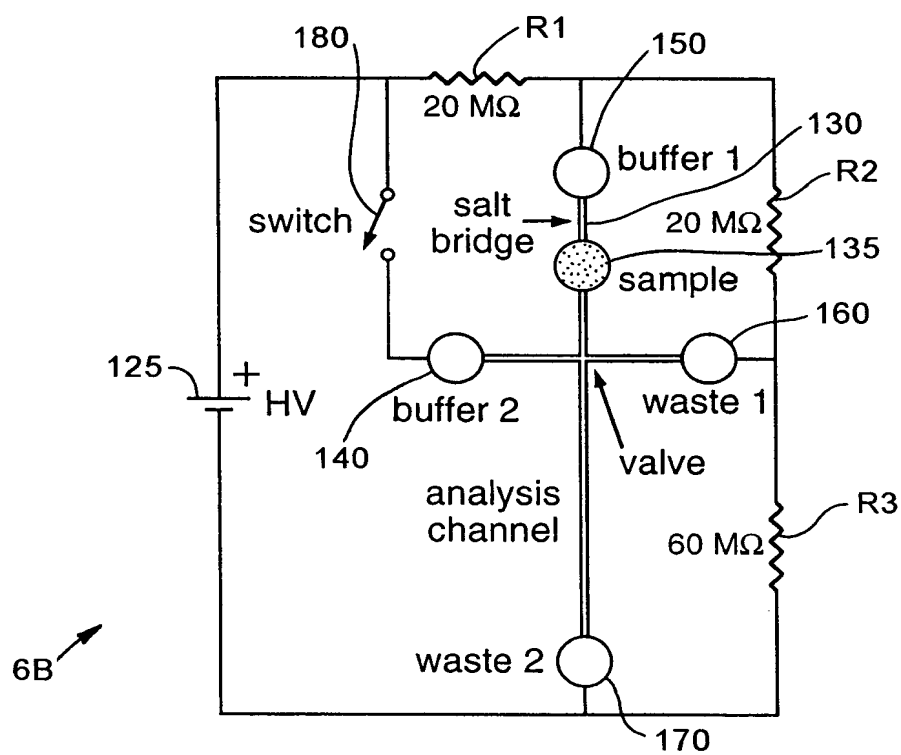


**FIG. 6b**  
fill



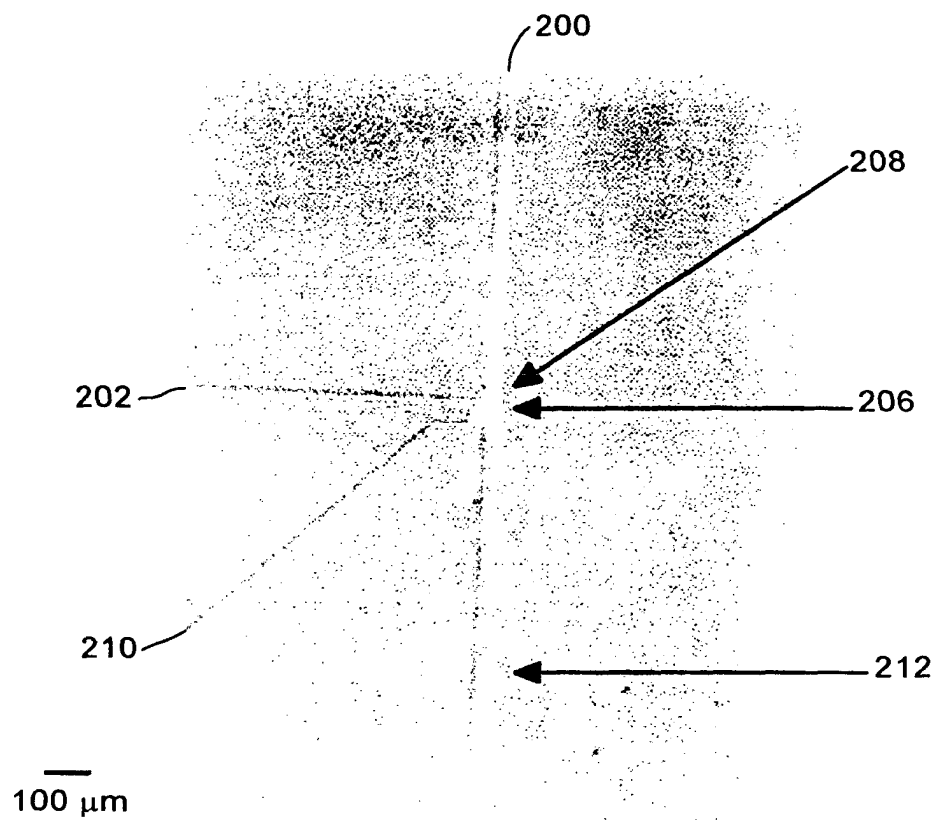
**FIG. 6c**  
rinse



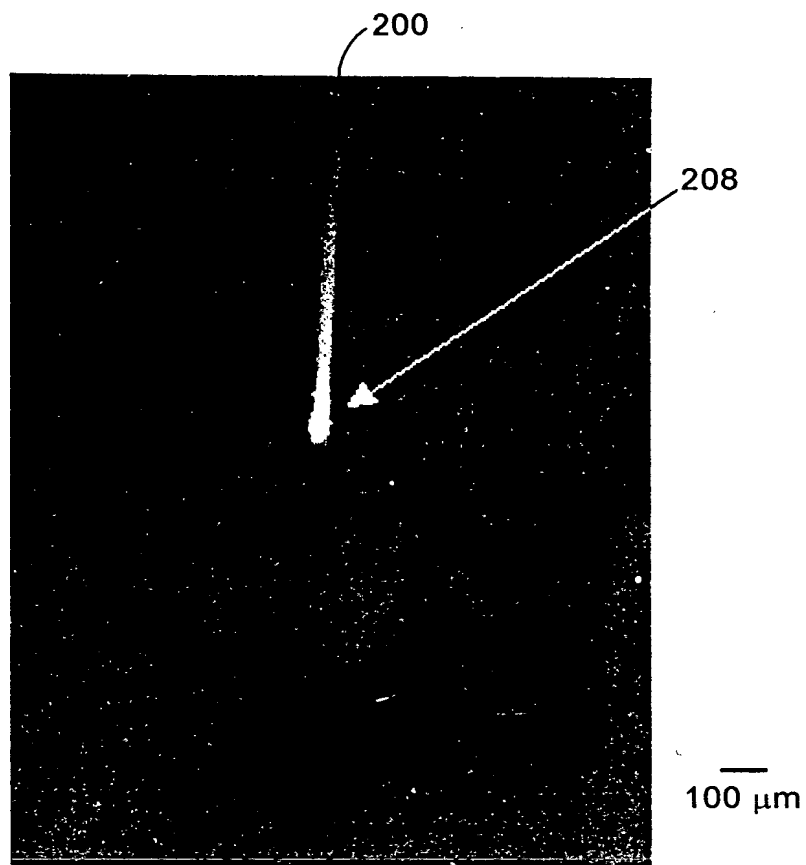


**FIG. 7**

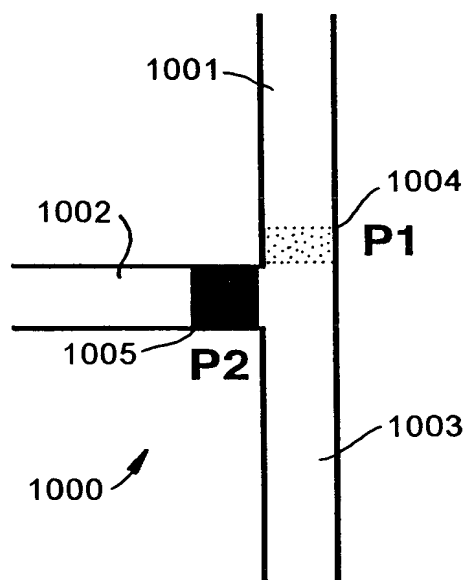




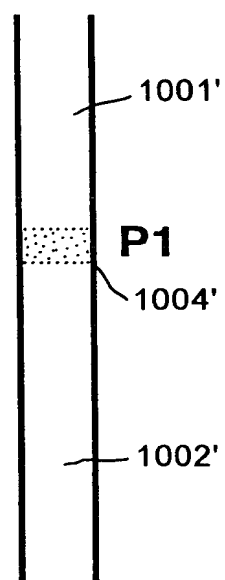
**FIG. 8**



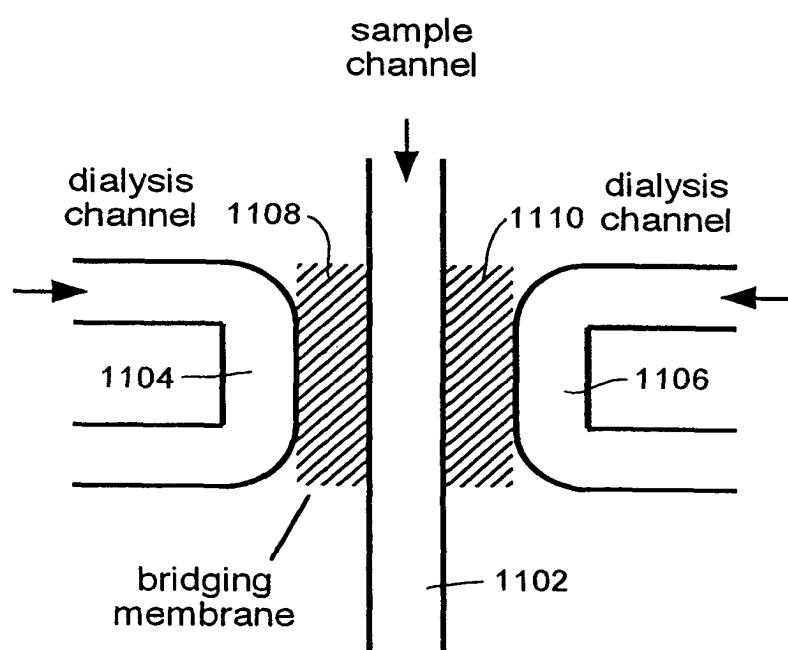
**FIG. 9**



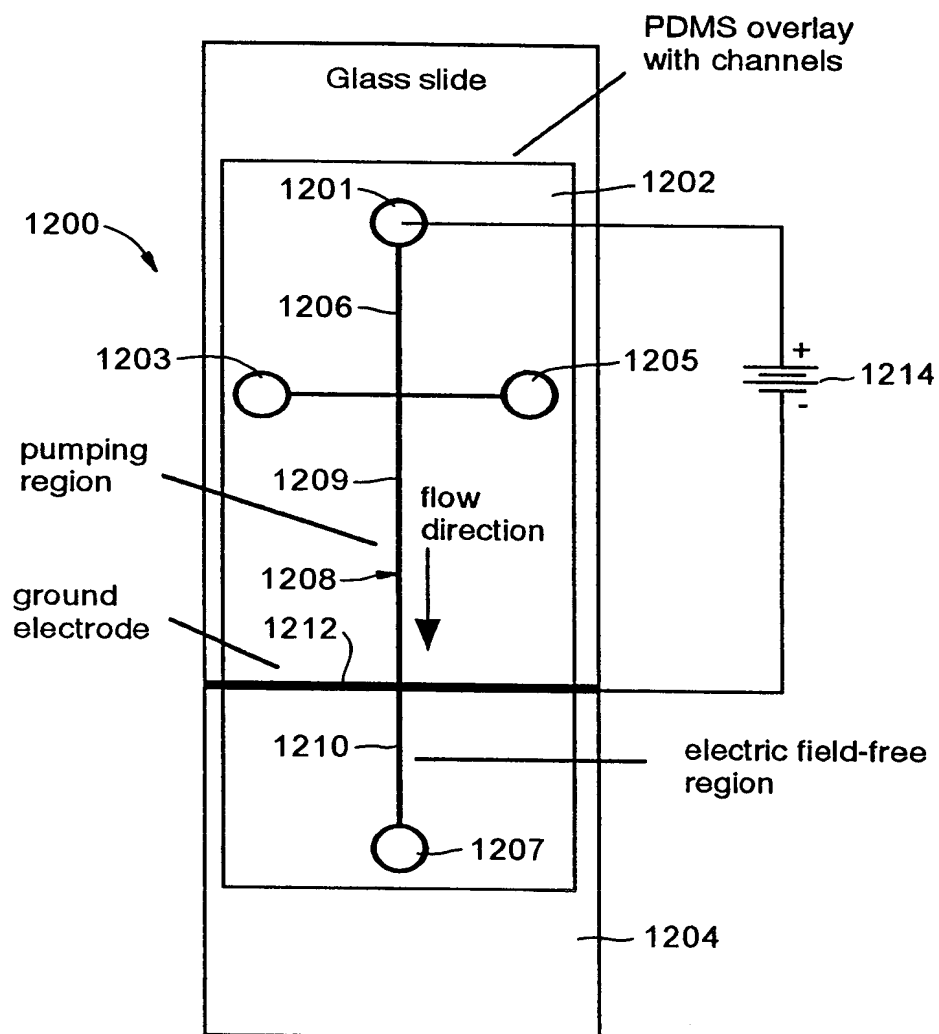
**FIG. 10A**



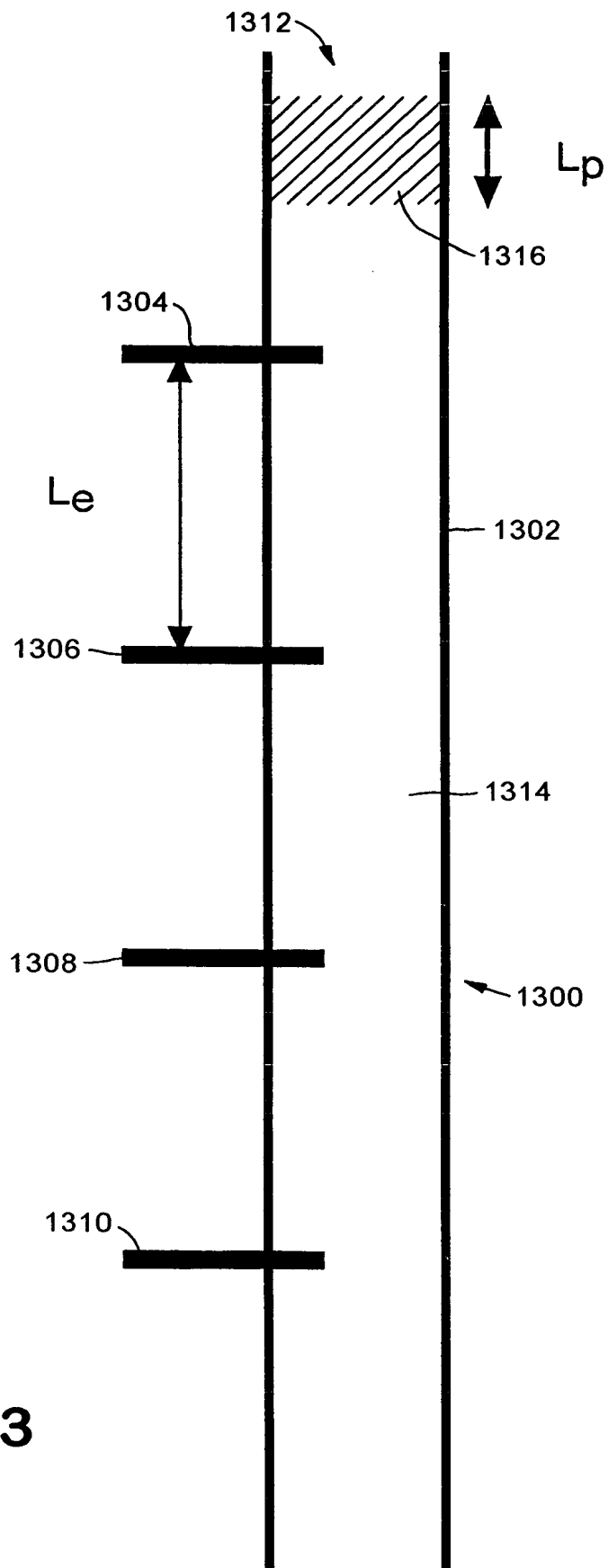
**FIG. 10B**



**FIG. 11**

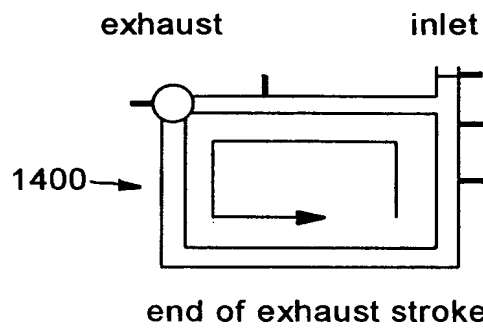


**FIG. 12**

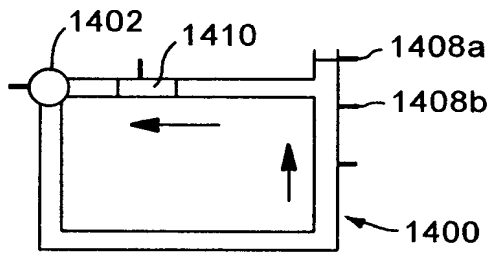


**FIG. 13**

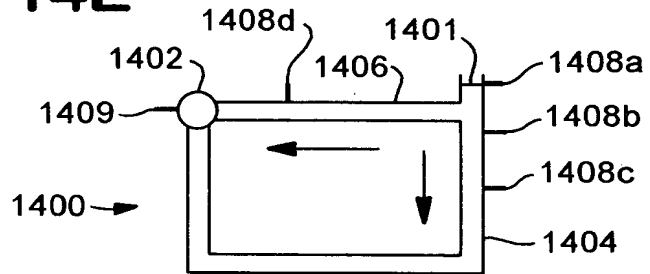
## Two-Stroke Microfluidic Vacuum Pump



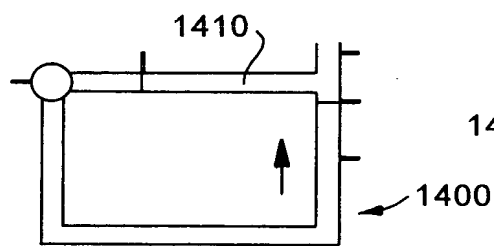
**FIG. 14E**



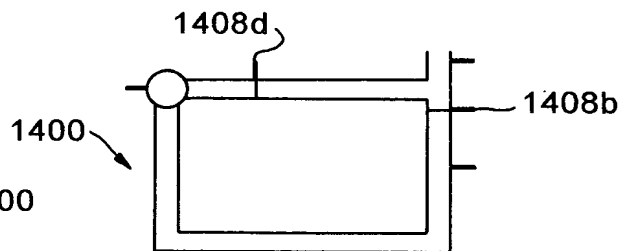
**FIG. 14D**



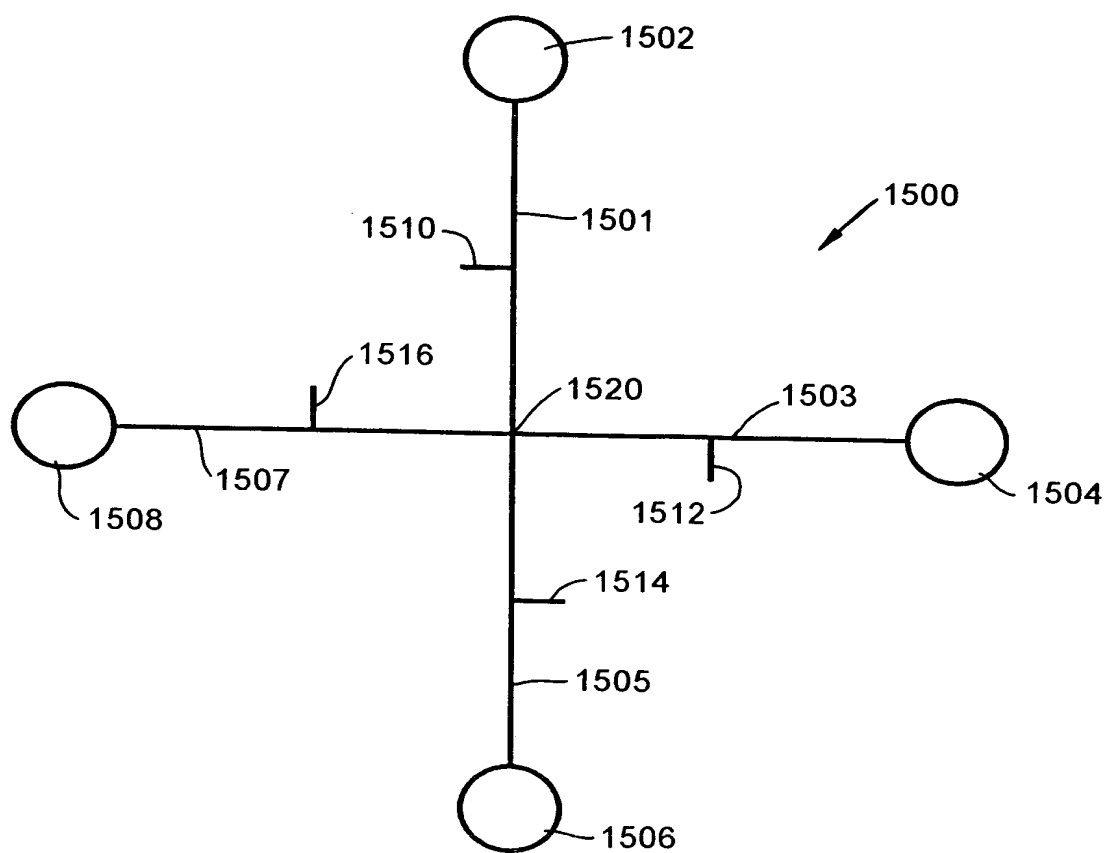
**FIG. 14A**



**FIG. 14C**

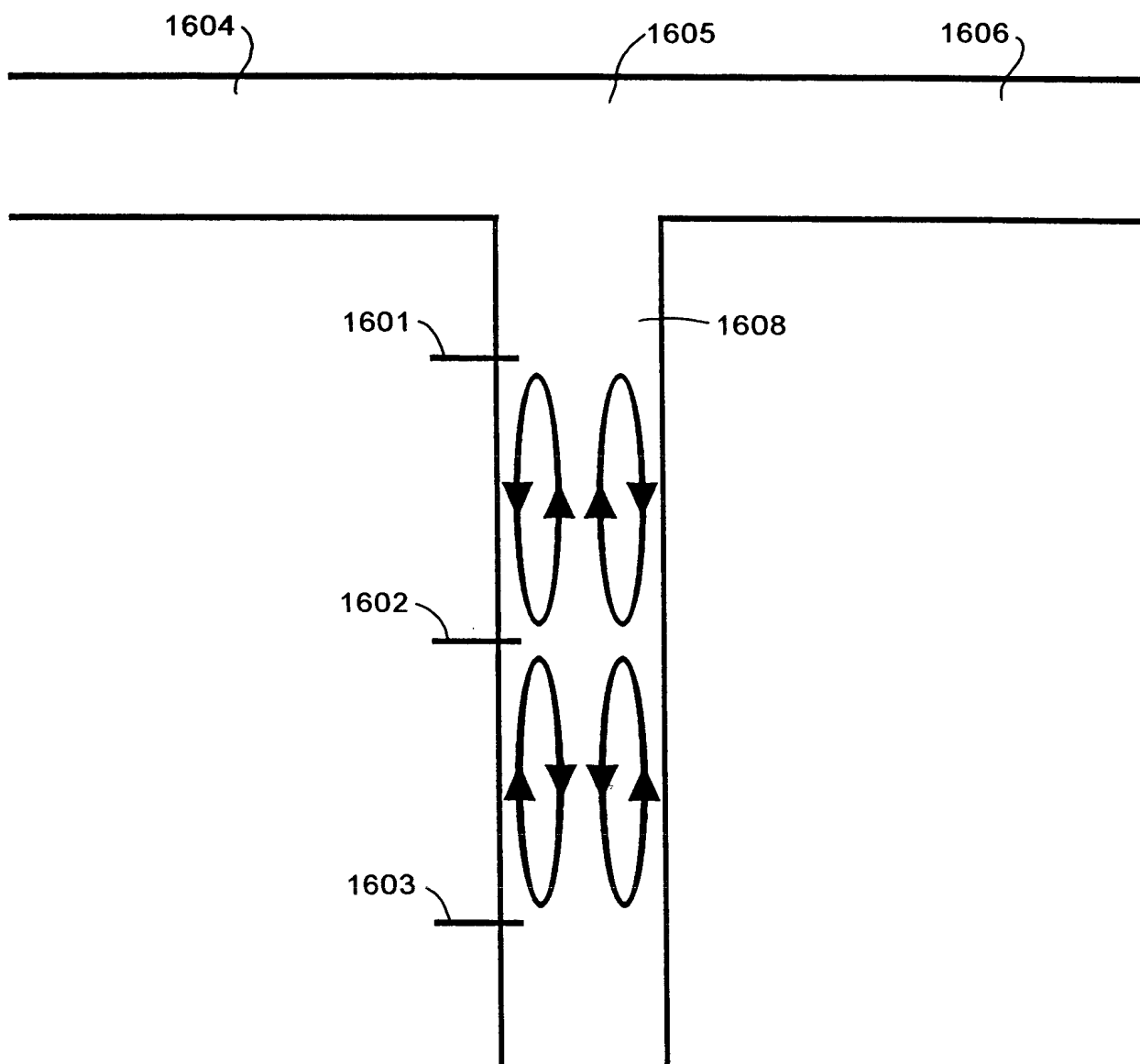


**FIG. 14B**



**FIG. 15**





**FIG. 16**